

Applicant: Hans-Christoph MAGEL  
Docket No. R.307235  
Preliminary Amdt.

**AMENDMENTS TO THE SPECIFICATION:**

Page 1, please add the following new paragraphs before paragraph [0001]:

[0000.2] CROSS-REFERENCE TO RELATED APPLICATIONS

[0000.4] This application is a 35 USC 371 application of PCT/EP 2005/050224  
filed on January 19, 2005.

[0000.6] BACKGROUND OF THE INVENTION

Please replace paragraph [0001] with the following amended paragraph:

[0001] ~~Specification~~ **Field of the Invention**

Page 2, please replace paragraph [0006] with the following amended paragraph:

[0006] ~~Summary of the Invention~~ **SUMMARY OF THE INVENTION**

Page 6, please add the following new paragraph after paragraph [0016]:

[0016.5] BRIEF DESCRIPTION OF THE DRAWINGS

Please replace paragraph [0017] with the following amended paragraph:

[0017] Further advantages, characteristics and details of the invention will become apparent from the ensuing description[[,] ~~in which the invention is described in detail in conjunction with of various exemplary embodiments, taken in conjunction with the drawings, in which: shown in the drawing.~~

Please delete paragraphs [0018] and [0019].

Please replace paragraph [0020] with the following amended paragraph:

[0020] Fig. 1, **shows** a first exemplary embodiment in longitudinal section through the injector, with a pressure booster; and

Please replace paragraph [0021] with the following amended paragraph:

[0021] Fig. 2, **shows** a second exemplary embodiment in longitudinal section through the injector, without a pressure booster.

Page 7, please replace paragraph [0022] with the following amended paragraph:

[0022] ~~Description of the Exemplary Embodiments~~

**DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Page 9, please replace paragraph [0029] with the following amended paragraph:

[0029] The valve body 31 is adjoined by a piezoelectric actuator body 39, which is closed by a cap 40. The cap 40, piezoelectric actuator body 39, valve body 31, intermediate piece 32, injector body 7, and nozzle body 8 together form the injector housing 6. In the piezoelectric actuator body 39, a central piezoelectric actuator chamber 41 is recessed out, which **chamber** is in communication, via a connecting conduit 42, with the fuel supply line 3 and thus with the high-pressure reservoir 2. In the piezoelectric actuator chamber 41, which is subjected to high pressure, there is a piezoelectric actuator 43, which has a piezoelectric actuator head 44 of metal, with a free face end 45. A collar 46 is embodied on the piezoelectric actuator head 44. A piezoelectric actuator spring 47 is fastened between the collar 46 and a piezoelectric actuator sleeve 48. The piezoelectric actuator head 44 is displaceable axially relative to the

piezoelectric actuator sleeve 48. A sealing edge that rests on the valve body 31 is embodied on the piezoelectric actuator sleeve 48. In the interior of the piezoelectric actuator sleeve 48, a hydraulic coupling chamber 49 is embodied between the face end 45 of the piezoelectric actuator head 44 and the free face end of the guide portion 35 of the valve piston 34, and this chamber is subjected to high pressure from the high-pressure reservoir 2.

Page 10, please replace paragraph [0030] with the following amended paragraph:  
[0030] In Fig. 1, the common rail injector 1 is shown in its deactivated state. The valve piston 34 is in its position of repose. The first sealing edge 36 is then in contact with the associated sealing seat, which is embodied on the valve body 31. Rail pressure prevails in the hydraulic coupling chamber 49. This is assured by a suitable design of the sealing gap. In the guide region of the two ~~coupler~~ pistons, the components are embodied such that they are subjected [[with]] two high pressure from outside as well. As a result, a widening of the sealing gap by the coupler chamber pressure, which would impair the function, is averted. Alternatively, the filling of the coupling chamber 49 could also be done by means of a suitably small throttle restriction. The valve control chamber 30, via the fuel supply lines 3, 4, the pressure booster work chamber 26, and the connecting conduit 33, is likewise subjected to the rail pressure from the high-pressure reservoir 2. The pressure booster control chamber 23 is likewise subjected to the rail pressure, via the connecting conduit 29. Rail pressure likewise prevails in the pressure booster chamber 22, the ~~nozzle~~ spring filter chamber 17, and the pressure chamber 15.

Page 14, please replace paragraph [0038] with the following amended paragraph:

[0038] For activating the common rail injector 1 shown in Fig. 2, the piezoelectric actuator 43 is supplied with current and expands. This causes a pressure increase in the hydraulic coupling chamber 49 and as a result a motion of the valve piston 34 downward. In the process, the first sealing edge 36 opens and the second sealing edge 37 closes, so that a communication is opened between the valve control chamber 30 and the return 38. As a result, the valve control chamber 30 is pressure-relieved. This pressure relief also has an effect, via the connecting conduit 55, in the nozzle needle control chamber [[51]] 57, so that the nozzle needle 59 lifts with its tip from the associated seat, and as a result fuel is injected into the combustion chamber of the engine.

Please add the following new paragraph after paragraph [0038]:

[0039] The foregoing relates to a preferred exemplary embodiment of the invention, it being understood that other variants and embodiments thereof are possible within the spirit and scope of the invention, the latter being defined by the appended claims.